

Case 3600

A proposal to reinstate as available the species-group names proposed for Devonian ammonoids (Mollusca, Cephalophoda) by Sobolew (1914a, 1914b)

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Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve current usage of ammonoid specific names that have been widely used by palaeontologists and stratigraphers for almost a century even though these names were established in a work placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Direction 32. This direction followed Opinion 132, in which the genus-group names (Gattungsbezeichnungen) established by Sobolew (1914a, 1914b) were considered to be formulae and not available generic names. However, Opinion 132 included no ruling on the specific names established in the same papers and some of these names have continued to be used in publications and databases. It is requested that the Commission reinstate the availability of Sobolew's species-group names published in the rejected work for the sake of nomenclatural stability. The spelling *umbilifer* Sobolew, 1914a is selected in this paper as the correct original spelling over *umbiliferum* under Article 24.2.3 of the Code.

Keywords. Nomenclature; taxonomy; Ammonoidea; Clymeniida; Goniatitida; Sobolew; Devonian; ammonoids.

1. In the early part of the 20th century D.N. Sobolew collected a large number of well-preserved goniatites and clymeniids (Cephalopoda, Ammonoidea) from the Upper Devonian of the Holy Cross (Świętokrzyskie) Mountains (Poland). In his initial studies (e.g. Sobolew, 1912) he published faunal lists and established in footnote descriptions a few new species using binominal nomenclature. The high degree of intergrading between long-known and new taxa prompted him to create a new, very formalistic approach to naming taxa, which was in conflict with then-existing rules of zoological nomenclature, reflected especially clearly in his formula-like generic terminology. His taxonomic and phylogenetic system was published in two scientific contributions, one in Warsaw (Sobolew, 1914a), and one, slightly later, in Germany (Sobolew, 1914b). Later, O.H. Schindewolf, the leading specialist for Devonian ammonoids at that time, presented a case to the Commission with the purpose of declaring Sobolew's 'generic' names (Gattungsbezeichnungen) formally

invalid; this was adopted in Opinion 132 (Smithsonian Miscellaneous Collections, 73(8): 39–40, 1936), which includes the statement ‘the Gattungsbezeichnungen published by Sobolew, 1914 are. . . formulae, not generic names, and have no status in Nomenclature’. This decision was briefly announced to ammonoid taxonomists (Schindewolf, 1949) and subsequently cited in other specialist publications (e.g. House, 1970, p. 669). In 1956, both of the works published by Sobolew in 1914 were placed on the Official Index of Rejected and Invalid Works in Zoological Nomenclature by Direction 32 (Opinions and Declarations: 1C: 313, 323–325, 427; May 1956). This action has remained unknown to the ammonoid taxonomic community at large.

2. Apart from the unavailable generic names, the two publications by Sobolew (1914a, 1914b) also included descriptions of 89 new species and subspecies, the latter often introduced as varieties (designated by ‘var.’). These names were initially little used (e.g. Schindewolf, 1923; Nalivkina, 1936a, 1936b, 1953), but from the beginning of the 1960s onwards, ca. 25 different authors, including the leading specialists on Devonian ammonoids, have referred to many of them. These authors include B.I. Bogoslovsky and V.E. Ruzhencev (Russia), M.R. House (U.K.), J. Czarnocki, H. Makowski and J. Dzik (Poland), J. Kullmann, O.H. Walliser, D. Korn and C. Klug (Germany), as well as the two applicants. Evidently the research community on Devonian ammonoids were quite unaware that both of Sobolew’s publications from 1914 had been placed on the Official Index (para. 1), and that not only the generic names, but also all of Sobolew’s new specific and subspecific names have no availability or validity in zoological nomenclature. Hence the researchers have continued using them and these names have been included in many taxonomic publications on Paleozoic ammonoids, fossil lists and databases (GONIAT database; GNI; ION).

3. In his original proposal to the Commission, O.H. Schindewolf was only concerned with the generic names. He never suggested that the specific names should be considered as unavailable and he himself continued using them (e.g. Schindewolf, 1923). The discussion between Schindewolf and the Commission recorded in Opinion 132 does not mention any specific or subspecific names.

4. Bogoslovsky (1957, p. 46) designated *Oma-dimeroceras* (*Praeglyphioceras*) *niwae* Sobolew, 1914 as the type species of his new genus *Lagowites* Bogoslovsky, 1957, while Czarnocki (1989, p. 61) designated *Gomi-protomeroclymenia Humboldti genulobata* Sobolew, 1914 as the type species of his new genus *Siekluckia*. *Lagowites* and *Siekluckia* are both widely accepted genera (Kullmann, 1960; Ruzhencev, 1962; Bogoslovsky, 1971; Yatskov, 1984, 1994; Becker et al., 2002; Bockwinkel et al., 2002; Dzik, 2002; Korn & Klug, 2002; Nikolaeva, 2011; GONIAT; Paleobiology Database, etc.).

5. Sobolew (1914a, 1914b) included his species/subspecies in his very formalistic taxonomic scheme but provided sufficient morphological distinctions and good enough illustrations to enable a clear understanding of his new taxa. His scheme incorporated not only these, but the majority of species that had been previously named in Lower/Middle Famennian ammonoid faunas. At least at the species level, he fully complied with all necessary principles of nomenclature. An exception was his reuse of identical subspecific names within different species of the same genera (five cases), creating primary homonyms.

6. More than half of Sobolew’s (1914a, 1914b) species/subspecies have been accepted as valid (marked in the list below) by subsequent workers. The specific names have been used by many authors for almost 100 years (e.g. Flügel, 1947; Ruzhencev,

1962; Walliser, 1966; Bogoslovsky, 1971; Becker, 1993, 2000; Bockwinkel et al., 2002; Dzik, 2002, 2006; Ebbighausen et al., 2002; Korn & Klug, 2002; Woroncowa-Marcinowska, 2006; Marynowski et al., 2007; Nikolaeva, 2010; Rakociński, 2012, etc.), and for 34 taxa there is currently a rather wide or complete consensus on their usefulness. If Sobolew's species/subspecies remain unavailable under Direction 32, all these taxa will have to be re-named, resulting in an unnecessary complication of the taxonomy of the Devonian ammonoids. The remaining specific names are considered by various authors as homonyms or junior subjective synonyms; however, because there is no universal agreement about their synonymy, it would make sense to make all the specific names proposed by Sobolew (1914a, 1914b) available under a new ruling.

7. The original generic assignments of Sobolew's (1914a, 1914b) species and subspecies poses no problem since he provided in his original publications a clear demarcation of the 'conventional' generic affinity, at least of all goniatites. He placed the 'conventional genera' at the rank of 'subgenera' immediately after his 'non-Linnean' generic terms. In addition he commented separately on the correlation of his generic formulae with the 'conventional genera'. This is also evident in the taxon list that Ozonkova (1977) provided in her summary/bibliography of Sobolew's scientific achievements. A similar list was published by Pajchlowa (1972). The new clymeniid species were mostly introduced as subspecies of established species (with the exception of *Gomi-monero-clymenia subacuta* Sobolew, 1914a and *Goma-protomeroclymenia varicata* Sobolew, 1914b).

8. About two thirds of the 34 taxa in the list (given below) that have been regarded as valid by all recent workers lack any purported junior synonyms. These names can potentially be conserved by redescribing the taxon under the same name with new authorship. Article 13.1.2 allows for availability by reference to earlier descriptions in suppressed works, as long as an explicit fixation of a holotype or lectotype is included (Article 16.4.2 of the Code). *Gomi-monero-clymenia humboldti genulobata* has already been reattributed to Czarnocki (1989) by Nikolaeva & Bogoslovsky (2005), which was partly because the type material of this taxon published by Czarnocki was wrongly claimed to be the holotype. The other nominal taxa in the list all have purported junior synonyms, which would prevent this course of action, and for many there is dispute about the precise synonymy. Even for the currently non-problematic species, specific names with reattributed authorship would have a non-negligible future risk of being recognized as invalid junior synonyms of taxa proposed since Sobolew's time, and meeting the conditions of Article 16.4.2 (concerning intended deposition of extant name-bearing types) would be difficult since the present whereabouts of Sobolew's type material are unknown (see para. 10 below). For all these reasons, we regard it as simplest to just re-establish the availability of all of Sobolew's (1914a, 1914b) species-group names.

9. No-one ever requested the Commission to suppress the specific names established by Sobolew (1914a, 1914b); it was his genera that were requested to be suppressed, but unfortunately the species were also suppressed when Sobolew's works were placed on the Index, along with other titles, following the Directive of the 14th International Congress of Zoology in Copenhagen which stated that the titles of books and papers dealt with by the Commission should be placed on the Official List and Official Index, respectively. The suppression of the specific names was therefore an inadvertent mistake, which has to be corrected.

10. The whereabouts of Sobolew's original collection are unknown. It is generally assumed that he took all the material with him to Kharkov after he left Poland. Subsequent Russian ammonoid specialists have never mentioned Sobolew's type material, but it is not certain that the collection has been lost. His nautiloid specimens re-emerged in the 1980s (allegedly brought from Kharkov) and are now housed in the Paleontological Institute in Moscow (Russia). Attempts were made by both applicants to find the ammonoid specimens, but those have not yet been recovered. Sobolew's species/subspecies documentation was sufficient to understand and recognize the great majority of them. In addition, there are subsequent collections from his type localities and from adjacent outcrops (e.g. House, 1970; Makowski, 1962, 1991; Czarnocki, 1989; Dzik, 2006; Woroncowa-Marcinowska; 2006; Niechwedowicz & Trammer, 2007; Marynowski et al., 2007). These include specimens that are suitable for neotype designations, if needed, for many but not all of the taxa under discussion. Sobolew's papers contain a comprehensive list of Devonian ammonoids from Poland, and these taxa have also been identified in many other regions of the world. All current Devonian ammonoid specialists have treated Sobolew's names as available, and thus it would be most practical to reinstate them for use in zoological nomenclature. It is requested that the specific names all be reinstated as available names, and the entries for Sobolew's works on the Official Index be amended to reflect that the species-group names proposed therein are available.

11. The International Commission on Zoological Nomenclature is accordingly asked:

- (a) to use its plenary power to rule that all 89 species-group names established by Sobolew (1914a, 1914b) are available from the original publications;
- (b) to emend the entries for Sobolew (1914a, 1914b) in the Official Index of Works in Zoology to record that the species-group names established in these works are available from the original publications, as ruled in (1) above.

A list of specific names established by Sobolew (1914a, 1914b), with reference to taxonomic treatments by subsequent authors

(The full list demonstrating the taxonomic treatment and usage is held by the Commission Secretariat)

The 34 taxa listed in bold have been regarded as valid by all/most subsequent authors and, therefore, would most likely have to be re-named if Sobolew's names continued to be considered unavailable. Those among them marked by † are based on juveniles and might eventually prove to have available synonyms. The unmarked non-bold names are generally considered as junior synonyms. The 14 additional names marked by * have been regarded as valid by some authors. Five junior homonyms and one nomen nudum that will remain invalid are marked by (-).

Genus *Oma-monoceras* (*Cheiloceras*)

1. ***acrilobum*** Sobolew, 1914a, p. 48;
2. ***acutilobum*** Sobolew, 1914a, p. 35;
3. ****subpartitum angustivaricatum*** Sobolew, 1914a, p. 37;
4. ****arcuatovaricatum*** Sobolew, 1914a, pp. 51–52;
5. ****avaricatum*** Sobolew, 1914a, p. 48;
6. ****contrcurvispina*** Sobolew, 1914a, p. 44;
7. ****contrverneuili*** Sobolew, 1914a, p. 44;

8. *depressum* Sobolew, 1914a, p. 49;
9. *discoideale* Sobolew, 1914a, p. 31;
10. **discotransversale* Sobolew, 1914a, pp. 46–47;
11. *glabrum* Sobolew, 1914a, p. 48;
12. *globosoides* Sobolew, 1914a, p. 42;
13. **globulare* Sobolew, 1914a, p. 49;
14. *subpartitum lativaricatum* Sobolew, 1914a, p. 36;
15. (-) *amblylobum lativaricatum* Sobolew, 1914a, p. 41;
16. **lenticulare* Sobolew, 1914a, pp. 49–50;
17. *longilobum* Sobolew, 1914a, p. 30;
18. (-) *sacculus longilobum* Sobolew, 1914a, p. 42;
19. **multivaricatum* Sobolew, 1914a, p. 31;
20. *discoideale* var. *parvum* Sobolew, 1914a, p. 31;
21. (-) *parvum* Sobolew, 1914a, p. 69;
22. *postinversum* Sobolew, 1914a, p. 43;
23. *Ch. praeglobosum* Sobolew, 1914a, p. 43
24. *praelagowiense* Sobolew, 1914a, p. 31;
25. *praelentiforme* Sobolew, 1914a, p. 34;
26. *praepolonicum* Sobolew, 1914a, p. 35;
27. *rotundum* Sobolew, 1914a, p. 44;
28. *semiinversum* Sobolew, 1914a, p. 46;
29. **simplicissimum* Sobolew, 1914a, p. 44;
30. **sinuvaricatum* Sobolew, 1914a, p. 51;
31. †*subcostatum* Sobolew, 1914a, p. 52;
32. *subinversum* Sobolew, 1914a, p. 43;
33. **sublagowiense* Sobolew, 1914a, p. 31;
34. **sublentiforme* Sobolew, 1914a, p. 30;
35. **sublentitransversale* Sobolew, 1914a, p. 47;
36. **subsinuvaricatum* Sobolew, 1914a, p. 51;
37. *tenuis* Sobolew, 1914a, p. 50;
38. **transversale* Sobolew, 1914a, p. 45–46;
39. *umbilifer* Sobolew, 1914a, p. 53. Hereby we select the spelling *umbilifer* as the correct original spelling over *umbiliferum* under Article 24.2.3 of the Code.

β-Oma-dimeroceras (*Sporadoceras*)

40. **curvispina* Sobolew, 1914a, p. 33;
41. *kielcense* Sobolew, 1914a, p. 32;
42. *lagowiense* Sobolew, 1914a, p. 32;
43. *nux* Sobolew, 1914a, p. 40;
44. **polonicum* Sobolew, 1914a, p. 39;
45. *praevaricatum* Sobolew, 1914a, p. 36;
46. **subvaricatum* Sobolew, 1914a, p. 35.

α-Oma-dimeroceras (*Dimeroceras*)

47. *globosum* Sobolew, 1914a, p. 42;
48. *lentiforme* Sobolew, 1914a, p. 34;
49. †*umbilicatum* Sobolew, 1914a, p. 54.

Oma-monomeroceras (*Aganides*)

50. **atavum* Sobolew, 1914a, p. 37;

51. (-) *discoideale* Sobolew, 1914a, p. 37;
 52. *sulcatum* var. *globus* Sobolew, 1914a, p. 40.

α -Oma-dimeroceras (*Praeglyphioceras*)

53. *lagowiense* var. *globulare* Sobolew, 1914a, p. 40;
 54. *kielcense* Sobolew, 1914a, p. 39;
 55. **lagowiense* Sobolew, 1914a, p. 39;
 56. †*niwae* Sobolew, 1914a, p. 48.

Oma-re-protomeroceras [assigned to *Prolobites* by Sobolew (1914a, p. 25)]

57. *umbilicatum* Sobolew, 1914a, p. 54.

Gomi-monomeroceras (*Tornoceras*)

58. *kielcense* Sobolew, 1914a, p. 57;
 59. †*sublentiforme* Sobolew, 1914a, p. 56.

Gomi-re-monomeroceras (*Tornoceras*)

60. *planilobum angulatolobatum* Sobolew, 1914b, p. 355;
 61. *planilobum arcuatolobatum* Sobolew, 1914b, p. 353;
 62. *planilobum avaricatum* Sobolew, 1914a, p. 60;
 63. (-) *dorsoplanum avaricatum* Sobolew, 1914a, p. 65;
 64. †*curvidorsatum* Sobolew, 1914a, p. 59;
 65. *evolutum* Sobolew, 1914a, p. 68;
 66. **flexuosum* Sobolew, 1914a, p. 62;
 67. *genulobatum* Sobolew, 1914b, p. 358;
 68. (-) *planilobum ornatum* Sobolew, 1914b, p. 356;
 69. †*planilobum* Sobolew, 1914a, p. 59;
 70. *genulobatum planum* Sobolew, 1914b, p. 358;
 71. *simplicius rotundatum* Sobolew, 1914b, p. 361;
 72. *simplicius subacutum* Sobolew, 1914b, p. 360;
 73. (-) *simplificatum rotundatum* Sobolew, 1914b, p. 361;
 74. †*simplicius* Sobolew, 1914a, p. 63;
 75. †*simplificatum* Sobolew, 1914a, p. 63;
 76. †*sinuvaricatum* Sobolew, 1914a, p. 59;
 77. (-) *simplificatum subacutum* Sobolew, 1914b, p. 360;
 78. *umbilicatoides* Sobolew, 1914a, p. 64;
 79. **umbilicatum* Sobolew, 1914a, p. 61.

Gomi-re-protomeroceras [assigned by Sobolew (1914a, p. 28) to *Mimoceras*]

80. *alobatum* Sobolew, 1914a, p. 61;
 81. **simplicissimum* Sobolew, 1914a, p. 63.

Gomi-monomeroclymenia [assigned by Sobolew (1914a, p. 28) to *Oxyclymenia* or *Cyrtoclymenia*]

82. **Humboldti flexilobata* Sobolew, 1914a, p. 64;
 83. *Humboldti genulobata* Sobolew, 1914a, p. 66;
 84. *curvidorsata planiloba* Sobolew, 1914b, p. 354;
 85. *Humboldti rotundata* Sobolew, 1914b, p. 361; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837);

86. **subacuta* Sobolew, 1914a, p. 64; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837); Dzik (2006) as a valid species of *Cyrtoclymenia*.
87. *Humboldti undosa* Sobolew, 1914b, p. 360; cited by Korn & Klug (2002) as a junior subjective synonym of *Protactoclymenia humboldtii* (Pusch, 1837).

Gomi-protomeroclymenia (assigned by Sobolew (1914a, p. 28) to *Protactoclymenia*, *Genuclymenia* or *Varioclymenia*)

88. *angustiseptata (?) subcostata* Sobolew, 1914b, p. 362;
89. *varicata* Sobolew 1914b, p. 373.

References

- Becker, R.T. 1993. Stratigraphische Gliederung und Ammonoideen-Faunen im Nehdenium (Oberdevon II) von Europa und Nord-Afrika. *Courier Forschungsinstitut Senckenberg*, **155**: 1–405.
- Becker, R.T. 2000. Taxonomy, evolutionary history and distribution of the middle to late Famennian Wocklumeriina (Ammonoidea, Clymeniida). *Mitteilungen aus dem Museum für Naturkunde in Berlin, Geowissenschaftliche Reihe*, **3**: 27–75.
- Becker, R.T. & House, M.R. 2009. Devonian ammonoid biostratigraphy of the Canning Basin. *GSWA Bulletin*, **145**: 415–439.
- Becker, R.T., House, M.R., Bockwinkel, J., Ebbighausen, J. & Aboussalam, Z.S. 2002. Famennian ammonoid zones of the eastern Anti-Atlas (southern Morocco). *Münstersche Forschungen zur Geologie und Paläontologie*, **93**: 159–205.
- Bockwinkel, J., Becker, R.T. & Ebbighausen, V. 2002. Morphometry and taxonomy of Lower Famennian Sporadoceratidae (Goniatitida) from Southern Morocco. *Abhandlungen der Geologischen Bundesanstalt*, **57**: 279–297.
- Bogoslovsky, B.I. 1957. O novykh vidakh devonskikh ammonoidei. *Materialy k Osnovam Paleontologii*, **1957**(1): 45–48.
- Bogoslovsky, B.I. 1971. Devonskie ammonoidei. II. Goniatity. *Trudy Paleontologicheskogo Instituta*, **127**: 1–228.
- Czarnocki, J. 1989. Klimenie Gór Świętokrzyskich. *Prace Panstwowego Instytutu Geologicznego*, **127**: 1–91.
- Dzik, J. 2002. Emergence and collapse of the Frasnian conodont and ammonoid communities in the Holy Cross Mountains, Poland. *Acta Palaeontologica Polonica*, **47**(4): 565–650.
- Dzik, J. 2006. The Famennian “Golden Age” of conodonts and ammonoids in the Polish part of the Variscan Sea. *Palaeontologia Polonica*, **63**: 1–359.
- Ebbighausen, V., Becker, R.T. & Bockwinkel, J. 2002. Morphometric Analyses and Taxonomy of Oxyconic Goniatites (Paratornoceratinae n. subfam.) from the Early Famennian of the Tafilalt (Anti-Atlas, Morocco). *Abhandlungen Der Geologischen Bundesanstalt*, **57**: 167–180.
- Flügel, H. 1947. Nachweis der Oberdevonstufe II im Grazer Paläozoikum. *Verhandlungen der geologischen Bundesanstalt Wien*, **1947**(1–12): 190–195.
- House, M.R. 1970. On the origin of clymenid ammonoids. *Palaeontology*, **13**(4): 664–676.
- Korn, D. & Klug, C. 2002. Ammonoidea Devonicae. *Fossilium Catalogus Animalia*, **138**: 1–375.
- Korn, D. & Ziegler, W. 2002. The ammonoid and conodont zonation at Enkenberg (Famennian, Late Devonian; Rhenish Mountains). *Senckenbergiana Lethaea*, **82**(2): 453–462.
- Kullmann, J. 1960. Die Ammonoidea des Devon im Kantabrischen Gebirge (Nordspanien). *Abhandlungen der Akademie der Wissenschaften und Literatur, Mathematisch-naturwissenschaftliche Klasse*, **1960**(7): 1–105.
- Makowski, H. 1962. Problem of sexual dimorphism in ammonites. *Palaeontologia Polonica*, **12**: I–V, 1–92.
- Makowski, H. 1991. Dimorphism and evolution of the goniatite *Tornoceras* in the Famennian of the Holy Cross Mountains. *Acta Palaeontologica Polonica*, **36**(3): 241–254.

- Marynowski, L., Rakocinski, M. & Zaton, M. 2007. Middle Famennian (Late Devonian) interval with pyritized fauna from the Holy Cross Mountains (Poland): Organic geochemistry and pyrite framboid diameter study. *Geochemical Journal*, **41**: 187–200.
- Nalivkina, A.K. 1936a. O verkhnedevonskikh goniatitakh Novoi Zemli. *Trudy Arkticheskogo Instituta*, **58**: 91–108.
- Nalivkina, A.K. 1936b. Verkhnedevonskie goniatitovye sloi r. Ai, Yuzhnyi Ural. *Trudy Tsentralnogo Nauchno-Issledovatel'skogo Geologo-Razvedochnogo Instituta (VNIGRI)*, **79**: 1–21.
- Nalivkina, A.K. 1953. Verkhnedevonskie goniatity i klimenii Mugodzhar. *Trudy Vsesoyuznogo Neftyanogo Nauchno-Issledovatel'skogo Geologo-Razvedochnogo Instituta (VNIGRI), novaya seriya*, **72**: 60–125.
- Niechwedowicz, M. & Trammer, J. 2007. Hydrodynamically controlled anagenetic evolution of Famennian goniatites from Poland. *Acta Palaeontologica Polonica*, **52**(1): 63–75.
- Nikolaeva, S.V. 2011. New data on the genus *Praeglyphioceras* (Praeglyphioceratidae, Ammonoidea). *Paleontologicheskii zhurnal*, **2011**(5): 28–36 (simultaneous translation in *Paleontological Journal*, **45**(5): 501–509).
- Nikolaeva, S.V. & Bogoslovsky, B.I. 2005. Devonskie ammonoidei. IV. Klimenii. *Trudy Paleontologicheskogo Instituta*, **287**: 1–220.
- Ozonkova, H. 1977. Problemy paleozoiku Gór Świętokrzyskich w pracach Dymitra Nikolaewicza Sobolewa. *Geologia*, **2**: 139–227.
- Pajchłowa, M. 1972. Fauna of the Devonian. Pp. 71–126 in Czerminski, J. & Pajchłowa, M. (Eds.), *Geology of Poland*, vol. 2. Catalogue of fossils, Part 1, Palaeozoic. Instytut Geologiczny, Warsaw.
- Rakociński, M. 2012. The youngest Devonian record of “Housean pits” in ammonoids. *Geological Quarterly*, **56**(2): 387–390.
- Ruzhencev, V.E. 1960. Printsipy sistemiki, sistema I filogeniya paleozoyskikh ammonoidey. *Trudy Paleontologicheskogo Instituta*, **133**: 1–331.
- Ruzhencev, V.E. 1962. Nadotryad Ammonoidea. Ammonoidei. Obshchaya chast'. Pp. 243–334 in Orlov, Y.A. & Ruzhencev, V.E. (Eds.), *Osnovy Paleontologii*, 5, *Mollyuski, Golovonogie*, vol. 1. Akademiya Nauk, Moscow.
- Schindewolf, O.H. 1923. Beiträge zur Kenntnis des Paläozoikums in Oberfranken, Ostthüringen und dem Sächsischen Vogtlande. 1. Stratigraphie und Ammoneen Fauna des Oberdevons von Hof a. S. *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Beilage-Band*, **49**: 250–357, 393–509.
- Schindewolf, O.H. 1949. Zur Nomenklatur der Clymenien (Cephalop., Ammon.). *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Monatshefte (B)*, **1949**: 64–76.
- Sobolew, D.N. 1912. O verkhnem neodevone Lagova. *Izvestiya Varshavskago Politekhnicheskago Instituta*, **3**: 1–20.
- Sobolew, D.N. 1914a. Nabroski po filogenii Goniatitov. *Izvestiya Varshavskago Politekhnicheskago Instituta*, **1914**(1): 1–193, 9 pls.
- Sobolew, D.N. 1914b. Über Clymenien und Goniatiten. *Paläontologische Zeitschrift*, **1**: 348–378.
- Walliser, O.H. 1966. Preliminary notes on Devonian, Lower and Upper Carboniferous goniatites in Iran. *Geological Survey of Iran, Report*, **6**: 7–24.
- Woroncowa-Marcinowska, T. 2006. Upper Devonian goniatites and co-occurring conodonts from the Holy Cross Mountains: Studies of the Polish Geological Institute collections. *Annales Societatis Geologorum Poloniae*, **76**: 113–160.
- Yatskov, S.V. 1984. Famennian ammonoids of Novaya Zemlya. *Byulleten Moskovskogo obschestva ispytatelei prirody, otdel geologicheskii*, **59**(3): 133.
- Yatskov, S.V. 1994. Devonian ammonoid zonation on Novaya Zemlya. *Newsletters on Stratigraphy*, **30**(3): 167–182.

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Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).